

TKB213105

Sensor dan Transduser

Sensors and Transducers

BASIC INFORMATION

Course Credit [sks]	2 / 100 minutes per Week
Course Type	Required
Course Classification	Engineering Topics
Prerequisites	Enter Prerequisite

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Fundamental and Engineering Knowledge (a)	Choose Student Outcome
Engineering Design (c)	Choose Student Outcome

Learning Outcomes

- LO1** Students are able to understand theories of biomedical sensors and transducers. [CPMK 1: Mahasiswa memahami teori sensor dan transduser biomedis.]
- LO2** Students are able to apply the sensors and transducers in the field of biomedical engineering. [CPMK 2: mahasiswa mampu mengaplikasikan sensor dan transduser pada bidang Teknik Biomedis]

COURSE DESCRIPTION

This course discusses basic concepts of biomedical sensors and transducers. This course also discusses design and analysis of medical tools based on sensors and transducers.

DESKRIPSI MATAKULIAH

Matakuliah ini mengajarkan konsep dasar dari sensor dan transduser biomedika. Disini juga diuraikan desain dan analisis peralatan medis berbasis sensor dan transduser.

TOPICS

1. Basic Concept of Sensor and Transducer (Konsep dasar sensor dan transduser).
2. Parameter Analysis in Sensor and Transducer (Analisis parameter dalam sensor dan transduser).
3. Principle of The Electrode (Prinsip kerja elektroda).
4. Inductive transducers and capacitive transducers (Transduser Induktif dan Transduser Kapasitif)
5. Piezoelectric transducers (Transduser Piezoelectrik)
6. Temperature measurements, optical measurements, tremor measuring instrument (Pengukuran suhu, pengukuran optik, alat ukur tremor)
7. Magnetostrictive ultrasonic transducers (Transduser Ultrasonik Magnetostriktif)

REFERENCES

1. Ian Sinclair, 2000, Sensors and Transducers, Elsevier